

received signal holding means for successively holding samples  
5 constituting said received signal sequence input in time-series manner,  
said received signal holding means including  
a predetermined number of storage circuits for holding in parallel  
samples in said predetermined number of said received signal sequence  
input in time-series manner,

10 logic circuits in said predetermined number provided at respective  
preceding stages of said predetermined number of storage circuits, said logic  
circuits each activated to pass an input signal to a corresponding one of said  
storage circuits and mask the input signal otherwise,

15 first control means for cyclically causing write enable state of said  
predetermined number of storage circuits at predetermined timing to  
cyclically write said samples of the received signal sequence input in time-  
series manner into said predetermined number of storage circuits at said  
predetermined timing, and

20 second control means for cyclically activating said predetermined  
number of logic circuits at said predetermined timing to cyclically input said  
samples of the received signal sequence input in time-series manner to said  
predetermined number of storage circuits at said predetermined timing; and

said digital matched filter further comprising  
25 spreading code generating means for generating a spreading code  
sequence for said despreading; and

correlation value calculating means for calculating a correlation  
value between said samples of the received signal sequence held in parallel  
in said predetermined number of storage circuits and said spreading code  
sequence.

3. The digital matched filter according to claim 2, wherein  
said predetermined number of logic circuits each have a load  
capacitance smaller than a load capacitance of each of said predetermined  
number of storage circuits.

4. A digital matched filter for despreading on reception side a

received signal sequence having been spread on transmission side,  
comprising:

received signal holding means for successively holding a first  
predetermined number of samples among samples constituting said received  
signal sequence input in time-series manner, said first predetermined  
number of samples held being divided into a second predetermined number  
of groups;

spreading code generating means for generating a spreading code  
sequence for said despreading;

correlation value calculating means in said second predetermined  
number provided respectively corresponding to said second predetermined  
number of groups each for calculating a correlation value between samples  
of a corresponding group and said spreading code sequence; and

output control means for successively outputting in time-series  
manner respective correlation values output from said second  
predetermined number of correlation value calculating means as correlation  
values output from one system.

5. A digital matched filter for despreading on reception side a  
received signal sequence having been spread on transmission side,  
comprising:

received signal holding means for successively holding samples  
constituting said received signal sequence input in time-series manner,  
said received signal holding means including  
a predetermined number of storage circuits for holding in parallel  
samples in said predetermined number of said received signal sequence  
input in time-series manner,

logic circuits in said predetermined number provided at respective  
preceding stages of said predetermined number of storage circuits, said logic  
circuits each activated to pass an input signal to a corresponding one of said  
storage circuits and mask the input signal otherwise,

first control means for cyclically causing write enable state of said  
predetermined number of storage circuits at predetermined timing to

cyclically write said samples of the received signal sequence input in time-series manner into said predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said predetermined number of logic circuits at said predetermined timing to cyclically input said samples of the received signal sequence input in time-series manner to said predetermined number of storage circuits at said predetermined timing; and

said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said despreading; and

correlation value calculating means for calculating a correlation value between said samples of the received signal sequence held in parallel in said predetermined number of storage circuits and said spreading code sequence,

said correlation value calculating means including

first product-sum calculating means for calculating a correlation value between a part of samples held in said predetermined number of storage circuits and spreading codes corresponding to said part of samples in said generated spreading code sequence,

second product-sum calculating means for calculating a correlation value between the rest of samples held in said predetermined number of storage circuits and spreading codes corresponding to said rest of samples in said generated spreading code sequence, and

decision means for deciding whether the correlation value output from said first product-sum calculating means exceeds a predetermined threshold value to stop calculation by said second product-sum calculating means when said decision means decides that the correlation value output from said first product-sum calculating means does not exceed said predetermined threshold value.

6. The digital matched filter according to claim 5, wherein said predetermined number of logic circuits each have a load capacitance smaller than a load capacitance of each of said predetermined

number of storage circuits.

7. A digital matched filter for desreading on reception side a received signal sequence having been spread on transmission side, comprising:

received signal holding means for successively holding samples constituting said received signal sequence input in time-series manner, said received signal holding means including

a first predetermined number of storage circuits for holding in parallel samples in said first predetermined number of said received signal sequence input in time-series manner, said first predetermined number of storage circuits being divided into a second predetermined number of groups,

logic circuits in said first predetermined number provided at respective preceding stages of said first predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said storage circuits and mask the input signal otherwise,

first control means for cyclically causing write enable state of said first predetermined number of storage circuits at predetermined timing to cyclically write said samples of the received signal sequence input in time-series manner into said first predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said first predetermined number of logic circuits at said predetermined timing to cyclically input said samples of the received signal sequence input in time-series manner to said first predetermined number of storage circuits at said predetermined timing;

said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said desreading; and

correlation value calculating means in said second predetermined number provided respectively corresponding to said second predetermined

number of groups each for calculating a correlation value between samples held in parallel in storage circuits of a corresponding group and said spreading code sequence,

35           said second predetermined number of correlation value calculating means each including

          first product-sum calculating means for calculating a correlation value between a part of samples held in the storage circuits of the corresponding group and spreading codes corresponding to said part of  
40   samples in said generated spreading code sequence,

          second product-sum calculating means for calculating a correlation value between the rest of samples held in said storage circuits of the corresponding group and spreading codes corresponding to said rest of samples in said generated spreading code sequence, and

45           decision means for deciding whether the correlation value output from said first product-sum calculating means exceeds a predetermined threshold value to stop calculation by said second product-sum calculating means when said decision means decides that the correlation value output from said first product-sum calculating means does not exceed said  
50   predetermined threshold value; and

          said digital matched filter further comprising  
          output control means for successively outputting in time-series manner respective correlation values output from said second  
predetermined number of correlation value calculating means as correlation  
55   values output from one system.

8. The digital matched filter according to claim 7, wherein  
said first predetermined number of logic circuits each have a load capacitance smaller than a load capacitance of each of said first predetermined number of storage circuits.

9. A mobile wireless terminal for digital radio communication comprising  
reception-related modem means for demodulating received digital

data and

5           signal processing means for processing a signal received by said reception-related modem means to output the processed signal,

          said reception-related modem means including a digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side,

10           said digital matched filter comprising:

          received signal holding means for successively holding a predetermined number of samples among samples constituting said received signal sequence input in time-series manner;

15           spreading code generating means for generating a spreading code sequence for said despreading; and

          correlation value calculating means for calculating a correlation value between said predetermined number of samples held in said received signal holding means and said generated spreading code sequence,

20           said correlation value calculating means including first product-sum calculating means for calculating a correlation value between a part of the predetermined number of samples held in said received signal holding means and spreading codes corresponding to said part of samples in said generated spreading code sequence,

25           second product-sum calculating means for calculating a correlation value between the rest of samples of the predetermined number of samples held in said received signal holding means and spreading codes corresponding to said rest of samples in said generated spreading code sequence, and

30           decision means for deciding whether the correlation value output from said first product-sum calculating means exceeds a predetermined threshold value to stop calculation by said second product-sum calculating means when said decision means decides that the correlation value output from said first product-sum calculating means does not exceed said predetermined threshold value.

10. A mobile wireless terminal for digital radio communication

comprising

reception-related modem means for demodulating received digital data and

5 signal processing means for processing a signal received by said reception-related modem means to output the processed signal,

said reception-related modem means including a digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side,

10 said digital matched filter comprising:

received signal holding means for successively holding samples constituting said received signal sequence input in time-series manner,

said received signal holding means including

15 a predetermined number of storage circuits for holding in parallel samples in said predetermined number of said received signal sequence input in time-series manner,

20 logic circuits in said predetermined number provided at respective preceding stages of said predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said storage circuits and mask the input signal otherwise,

25 first control means for cyclically causing write enable state of said predetermined number of storage circuits at predetermined timing to cyclically write said samples of the received signal sequence input in time-series manner into said predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said predetermined number of logic circuits at said predetermined timing to cyclically input said samples of the received signal sequence input in time-series manner to said predetermined number of storage circuits at said predetermined timing; and

30 said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said despreading; and

correlation value calculating means for calculating a correlation value between said samples of the received signal sequence held in parallel

35 in said predetermined number of storage circuits and said spreading code sequence.

11. The mobile wireless terminal according to claim 10, wherein said predetermined number of logic circuits each have a load capacitance smaller than a load capacitance of each of said predetermined number of storage circuits.

12. A mobile wireless terminal for digital radio communication comprising  
reception-related modem means for demodulating received digital data and

5 signal processing means for processing a signal received by said reception-related modem means to output the processed signal,

said reception-related modem means including a digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side,

10 said digital matched filter comprising:

received signal holding means for successively holding a first predetermined number of samples among samples constituting said received signal sequence input in time-series manner, said first predetermined number of samples held being divided into a second predetermined number of groups;

15 spreading code generating means for generating a spreading code sequence for said despreading;

20 correlation value calculating means in said second predetermined number provided respectively corresponding to said second predetermined number of groups each for calculating a correlation value between samples of a corresponding group and said spreading code sequence; and

25 output control means for successively outputting in time-series manner respective correlation values output from said second predetermined number of correlation value calculating means as correlation values output from one system.



13. A mobile wireless terminal for digital radio communication comprising

reception-related modem means for demodulating received digital data and

5 signal processing means for processing a signal received by said reception-related modem means to output the processed signal,

said reception-related modem means including a digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side,

10 said digital matched filter comprising:

received signal holding means for successively holding samples constituting said received signal sequence input in time-series manner,

said received signal holding means including

15 a predetermined number of storage circuits for holding in parallel samples in said predetermined number of said received signal sequence input in time-series manner,

logic circuits in said predetermined number provided at respective preceding stages of said predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said storage circuits and mask the input signal otherwise,

20 first control means for cyclically causing write enable state of said predetermined number of storage circuits at predetermined timing to cyclically write said samples of the received signal sequence input in time-series manner into said predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said predetermined number of logic circuits at said predetermined timing to cyclically input said samples of the received signal sequence input in time-series manner to said predetermined number of storage circuits at said predetermined timing; and

30 said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said despreading; and

correlation value calculating means for calculating a correlation

value between said samples of the received signal sequence held in parallel  
35 in said predetermined number of storage circuits and said spreading code  
sequence,

said correlation value calculating means including

first product-sum calculating means for calculating a correlation  
40 value between a part of samples held in said predetermined number of  
storage circuits and spreading codes corresponding to said part of samples in  
said generated spreading code sequence,

second product-sum calculating means for calculating a correlation  
value between the rest of samples held in said predetermined number of  
storage circuits and spreading codes corresponding to said rest of samples in  
45 said generated spreading code sequence, and

decision means for deciding whether the correlation value output  
from said first product-sum calculating means exceeds a predetermined  
threshold value to stop calculation by said second product-sum calculating  
means when said decision means decides that the correlation value output  
50 from said first product-sum calculating means does not exceed said  
predetermined threshold value.

14. The mobile wireless terminal according to claim 13, wherein  
said predetermined number of logic circuits each have a load  
capacitance smaller than a load capacitance of each of said predetermined  
number of storage circuits.

15. A mobile wireless terminal for digital radio communication  
comprising

reception-related modem means for demodulating received digital  
data and

5 signal processing means for processing a signal received by said  
reception-related modem means to output the processed signal,

said reception-related modem means including a digital matched  
filter for despreading on reception side a received signal sequence having  
been spread on transmission side,

10           said digital matched filter comprising:  
            received signal holding means for successively holding samples  
constituting said received signal sequence input in time-series manner,  
            said received signal holding means including  
            a first predetermined number of storage circuits for holding in  
15   parallel samples in said first predetermined number of said received signal  
sequence input in time-series manner, said first predetermined number of  
storage circuits being divided into a second predetermined number of  
groups,  
            logic circuits in said first predetermined number provided at  
20   respective preceding stages of said first predetermined number of storage  
circuits, said logic circuits each activated to pass an input signal to a  
corresponding one of said storage circuits and mask the input signal  
otherwise,  
            first control means for cyclically causing write enable state of said  
25   first predetermined number of storage circuits at predetermined timing to  
cyclically write said samples of the received signal sequence input in time-  
series manner into said first predetermined number of storage circuits at  
said predetermined timing, and  
            second control means for cyclically activating said first  
30   predetermined number of logic circuits at said predetermined timing to  
cyclically input said samples of the received signal sequence input in time-  
series manner to said first predetermined number of storage circuits at said  
predetermined timing;  
            said digital matched filter further comprising  
35   spreading code generating means for generating a spreading code  
sequence for said despreading; and  
            correlation value calculating means in said second predetermined  
number provided respectively corresponding to said second predetermined  
number of groups each for calculating a correlation value between samples  
40   held in parallel in storage circuits of a corresponding group and said  
spreading code sequence,  
            said second predetermined number of correlation value calculating

means each including

first product-sum calculating means for calculating a correlation  
45 value between a part of samples held in the storage circuits of the  
corresponding group and spreading codes corresponding to said part of  
samples in said generated spreading code sequence,

second product-sum calculating means for calculating a correlation  
value between the rest of samples held in said storage circuits of the  
50 corresponding group and spreading codes corresponding to said rest of  
samples in said generated spreading code sequence, and

decision means for deciding whether the correlation value output  
from said first product-sum calculating means exceeds a predetermined  
threshold value to stop calculation by said second product-sum calculating  
55 means when said decision means decides that the correlation value output  
from said first product-sum calculating means does not exceed said  
predetermined threshold value; and

said digital matched filter further comprising  
output control means for successively outputting in time-series  
60 manner respective correlation values output from said second  
predetermined number of correlation value calculating means as correlation  
values output from one system.

16. The mobile wireless terminal according to claim 15, wherein  
said first predetermined number of logic circuits each have a load  
capacitance smaller than a load capacitance of each of said first  
predetermined number of storage circuits.